

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

PCT/EP2003/011910



10/532.725

Applicant's or agent's file reference B02/0559PC	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/011910	International filing date (day/month/year) 27 October 2003 (27.10.2003)	Priority date (day/month/year) 28 October 2002 (28.10.2002)
International Patent Classification (IPC) or national classification and IPC C01B 7/04		
Applicant BASF AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.  <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of <u>4</u> sheets.
3. This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 27 May 2004 (27.05.2004)	Date of completion of this report 20 May 2005 (20.05.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/EP2003/011910

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages \_\_\_\_\_ 1-17 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_ 1-6 \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 17 January 2005 (17.01.2005)
- ☒ the drawings:  
pages \_\_\_\_\_ 1/3-3/3 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1 - 6	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 4	YES
	Claims	5, 6	NO
Industrial applicability (IA)	Claims	1 - 6	YES
	Claims		NO

### 2. Citations and explanations

- (1) The following search report citations are specified here for the first time:

D1: US-A-2542961

D2: EP-A-618170

- (2) Novelty:

Document D1 (US-A-2542961 (JOHNSON)) discloses a method for producing chlorine from hydrochloric gas and an oxidator (e.g. oxygen). Following oxidation, gaseous HCl is separated and fed back to the oxidation reactor. The separation takes place in a stripper (the hydrogen chloride distillation (44); see the drawing) and in a distillation column (55). In said distillation column (55) hydrochloric gas and water are separated with the aid of a renewable saline solution. The aqueous hydrogen chloride streams (48) and (10) are fed back together to the oxidation reactor. The description (column 7, lines 16 to 24) indicates that the hydrogen chloride used can be introduced into the system either entirely or partly in the form of an aqueous solution (67).

The method defined in claim 1 of the present application differs in that in the distillation stages (44) and (55) in D1, a partial stream IIb ((27) in figure 2 of the application) is fed back to the first stage (the distillation column (1)) (and not directly to the oxidation reactor). Therefore, drying of the salt is not required for removing the water.

(3) Inventive step:

This two-stage hydrochloric acid distillation is a non-obvious replacement to the costly extractive distillation using the saline solution. The method as per claim 1 is therefore considered to involve an inventive step. The measures in dependent claims 2 to 4 are novel and inventive since they concern particular embodiments of the method as per claim 1.

Independent claim 6 differs from document D1 only in that the production of chlorine (stages V-X) is integrated with the production of organic isocyanates (stages I-IV, XI).

It is known *per se* from D2 to produce hydrogen chloride using a conventional method for producing isocyanates. The use of such a stream to produce chlorine as per the method in D1 is an obvious measure and therefore does not meet the requirement of PCT Article 33(3).

A method for producing organic isocyanates in which the distillation of the aqueous hydrogen chloride stream takes place in two separate stages (as per the method in the amended claim 1) would meet the

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requirement for inventive step.

- (4) The description has not been brought into line with the amended claims and the prior art (D1 and D2) is not mentioned in the description.